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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SMITH, CAROLYN L

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1631

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/708,815		FISCHER ET AL.	
	Examiner		Art Unit	
	Carolyn L. Smith		1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 18-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's amendments and remarks, filed 5/11/07, are acknowledged. Amended claims 1 and 6-17 are acknowledged.

Applicant's arguments, filed 5/11/07, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from the previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Claims 1-17 are herein under examination.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. This rejection is maintained and reiterated for reasons of record.

Under the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (published in the O.G. notice (1300 OG 142) on 11/22/2005) a method that does not result in a physical transformation of matter MAY be statutory where it recites a concrete, tangible and useful result; i.e. a practical application.

In the instant case, the claims are directed to a method for chemical compound development project management. Claims 1-14 do not appear to result in a physical

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transformation of matter or recite a concrete, TANGIBLE, and useful result. Therefore, claims 1-14 are considered to be non-statutory subject matter.

While some claims recite “generating” limitations, these limitations may be interpreted to take place solely within a computer such that they are not necessarily displayed or otherwise communicated to a customer (user). For example, a “bill” as recited in instant claim 3 is simply a list of data that may be a concrete result. But unless the “bill” is displayed to the user, then what is generated is just a data listing held in computer memory that is not a TANGIBLE result. In reference to generating an estimated project cost (i.e. instant claim 7), computers generate cost estimates all the time, but not necessarily output them. It is noted that amending in a limitation of displaying the result to a user (provided there is written support in the originally filed application) would nullify this rejection.

It is noted that instant claims 15 and 16 together indicate that something is being communicated to the customer, so claims 15 and 16 as well as dependent claim 17 are statutory subject matter.

Applicant argues that claims 1-14 recite a tangible result. This is found unpersuasive as “deriving information” does not necessarily mean the information is presented in a tangible form to the user. The “information” may still be within the computer without being displayed or communicated to the user. Applicant reiterates the Examiner’s statement that “generating” may be interpreted to take place solely within the computer. Applicant argues that as articulated in the above Interim Guidelines indicated, the claims do not need to recite steps taken to achieve a particular result are useful, tangible and concrete, such as a step of displaying or a step of being

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communicated to a user. It is noted that the claims may satisfy statutory requirements by either reciting a practical application or by reciting a concrete, tangible, AND useful result. Applicant argues that the derived information in the “deriving” step of instant claim 1 is clearly “useful, tangible and concrete.” This is found unpersuasive as “deriving information” does not necessarily mean the information is presented in a tangible form to the user. The “information” may still be within the computer without being displayed or communicated to the user. Applicant argues that the derived information can be displayed or used for further processes without being displayed or communicated to the user. This statement is found unpersuasive as “can be” or further intended uses not recited in the claims fail to satisfy the statutory requirement.

Applicant argues that data structure claims sometimes referred to as Lowry Claims, In re Lowry, 32 F.3d 1579, (Fed. Cir 1994), are clearly patentable subject matter and weight should be given to the functional interrelations of the data structures, in this case in a client-server environment that can be accessed by various object oriented software applications executing in the client-server environment. This statement is found unpersuasive as the claims recite “providing access” but not actually “accessing”. Applicant argues the limitations are recited as residing on and accessible to a client-server network environment and are functionally interrelated as noted above, which clearly indicates that they are accessible by graphical user interface applications executing in the client-server network environment. This statement is found unpersuasive as the instant claims do not recite any client-server network. Applicant amended claims to recite a “providing access” limitation. However, this passive limitation fails

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to recite a concrete, tangible, and useful result OR result in a physical transformation of matter because it may take place solely within a computer and does not have a result in a tangible form.

Claims Rejected Under 35 U.S.C. § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Claims 1 and 9 recite the limitation "the molecules database" in lines 9 of each. There is insufficient antecedent basis for this limitation in these claims. While there is previous mention of a molecule database, there is no previous mention of a "molecules database". Clarification of this issue via clearer claim wording is requested. Claims 2-8 and 10-17 are also rejected due to their dependency from claim 1. This rejection is necessitated by amendment.

The preamble of claim 1 recites "a method of managing data for chemical compound development project" whereas the body of the claim does not recite any type of managing. Therefore, it is unclear if the preamble or the body of the claim is controlling the metes and bounds of claim 1. Clarification of this issue via clearer claim wording is requested. Claims 2-8 are also rejected due to their dependency from claim 1. This rejection is maintained. Applicant argues that the preamble controls the metes and bounds of the claim. This statement is found confusing as to why there is a disconnect between the preamble and the body of the claim.

While the body of the claim recites “providing access” to databases, this does not necessarily mean data is being managed.

Claim 8 recites the term “using” which is vague and indefinite. It is unclear whether this “using” term is intended to be an actual step or merely some limitation of the data applied to the searching. If “using” is intended to be a step, it is unclear what step or steps are intended to be performed to carry out the “using” limitation. Clarification of this issue via clearer claim wording is requested. This rejection is maintained. Applicant argues the claim has been amended to clarify the “using” terminology. It is still unclear what step or steps are intended.

Claim 9 recites the term “using” (line 12) which is vague and indefinite. It is unclear whether this “using” term is intended to be an actual step or merely some limitation of the data applied to the generating. If “using” is intended to be a step, it is unclear what step or steps are intended to be performed to carry out the “using” limitation. Clarification of this issue via clearer claim wording is requested. Claims 10-17 are also rejected due to their dependency from claim 9. This rejection is maintained. Applicant argues the claim has been amended to clarify the “using” terminology. It is still unclear what step or steps are intended.

Claim 15 recites the limitations “the target molecules” (line 2). There is insufficient antecedent basis for this limitation in this claim as claim 9 (from which claim 15 depends) recites only a single “target molecule” associated with the synthesis plan. Clarification of this issue via clearer claim wording is requested. Claims 16-17 are also rejected due to their dependency from claim 15. This rejection is maintained. Applicant argues they have amended the claim to address this issue; however, “the target molecules” still lacks antecedent basis for the reason given above.

Claim Rejections – 35 USC §102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 and 7-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Mydlowec et al. (US 6,571,226 B1).

This rejection is maintained and reiterated for reasons of record.

Mydlowec et al. disclose a method of managing data for chemical compound development project (title; abstract; Figures 6 and 7; col. 2, last paragraph) by providing a molecule database with molecular information including reagents to produce a target molecule (col. 2, lines 60-63; col.3, lines 43-47; and col. 5, lines 1-24; Figure 6), providing a synthesis database including activity information (col. 5, lines 25-35), providing access to the databases for a plurality of user groups via a user interface (col. 3, paragraph 11; col. 5, paragraph 1 to col. 6, paragraph 2; col. 12, paragraphs 1-5), and deriving information from the databases regarding the synthesis project (col. 5, paragraphs 5 and 6) including generating a synthesis plan for a target molecule (col. 2, paragraph 7) via querying the chemical and reaction databases (col. 8, paragraph 7), as stated in instant claims 1 and 9. Mydlowec et al. disclose identifying reactants and starting materials (col. 5, second and third paragraphs; col. 2, paragraphs 2 and 7; col. 3, lines 38-42 and 55-64; col. 4, third and fifth paragraphs) for the production of intermediates and

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target molecule (col. 4, second and third paragraphs and Figures 2, 3), as stated in instant claims 2, 7, 9, and 11. Mydlowec et al. disclose decoding each individual to produce the synthesis route and determining properties of the synthesis to produce a final product (Figures 1-4; col. 3, last three paragraphs; col. 4, third and last 2 paragraphs) including yield estimates (col. 8, paragraph 8) which represents generating a bill (list) of materials identifying quantities of all materials required in the production of the target molecule, as stated in instant claim 3. Mydlowec et al. disclose identifying solvents, reagents, and other factors including conditions required for a reaction to occur in the reaction database (col. 5, fourth through sixth paragraphs) for the production of intermediates and target molecule (col. 4, second and third paragraphs and Figures 2, 3) which represents identifying required resources and activities from the synthesis database, as stated in instant claims 4, 5, 7, 12, and 13. Mydlowec et al. disclose considering the costs of starting materials and purifying end products, as well as the time and energy requirements of reactions (col. 1, paragraph 5), minimizing overall costs (col. 3, lines 49-50), and querying the chemical and reaction databases for determining the yield estimate and cost estimate of the entire synthesis (col. 8, paragraphs 7 and 8) for the production of intermediates and target molecule (col. 4, second and third paragraphs and Figures 2, 3) which represents identifying costs and generating an estimated project cost, as stated in instant claims 7 and 14. Mydlowec et al. disclose accessing the molecule and reaction databases with molecule and conditions functions (col. 5, first six paragraphs) and using a program to assess the individual reaction steps and works in a forward (synthetic) direction in which a user inputs reactant molecules and reaction conditions and then resulting products are predicted (col. 6, second paragraph) which represents searching the database using chemical indicia to retrieve information regarding the synthesis

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project, as stated in instant claim 8. Mydlowec et al. disclose identifying required intermediate molecules (col. 4, second and third paragraphs and Figures 2, 3), as stated in instant claim 10.

Thus, Mydlowec et al. anticipate the limitations of instant claims 1-5 and 7-14.

Applicant recites various case law regarding anticipation. Applicant argues that Mydlowec et al. do not disclose the "providing access" step as recited in the instant invention. This statement is found unpersuasive as Mydlowec et al. disclose providing access to the databases for a plurality of user groups via a user interface (col. 3, paragraph 11; col. 5, paragraph 1 to col. 6, paragraph 2; col. 12, paragraphs 1-5). Applicant summarizes Mydlowec et al. and the instant invention. Applicant argues that the instant invention allows users to be more interactive with the chemical compound development project. This statement is found unpersuasive as the degree of user interaction is not specified in the instant claims. Mydlowec et al. disclose the instant claim limitations given their broadest and reasonable interpretation. Applicant argues that Mydlowec et al. provide a method for generating only a specific synthesis route for a target molecule, whereas the present invention provides various resources to manage the whole chemical compound development project at the administrative level. This statement is found unpersuasive as the instant claims do not preclude a specific synthesis route as disclosed by Mydlowec et al. In addition, the instant claims do not recite anything about an administrative level. Applicant argues that because the Mydlowec et al. provide an "automated" computer system to generate a synthesis route for a target molecule, it does not provide any access to the resources for the users who have been involved in the chemical compound development project to manage the designing process for the synthesis route. This statement is found unpersuasive as

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Mydlowec et al. disclose providing access to the databases for a plurality of user groups via a user interface (col. 3, paragraph 11; col. 5, paragraph 1 to col. 6, paragraph 2; col. 12, paragraphs 1-5). Applicant argues that the present invention is not anticipated by the Mydlowec et al. for the reasons given above. This statement is found unpersuasive as Applicant's arguments are deemed unpersuasive for the reasons given above.

Claim Rejections – 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. (e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mydlowec et al. (US 6,571,226 B1) in view of Kaufman (US 2001/0032029 A1).

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This rejection is maintained and reiterated for reasons of record.

Mydlowec et al. describe the limitations of instant claims 1-5 and 7-14, as stated in the 35 USC 102 rejection above. Mydlowec et al. describe querying the chemical and reaction databases for determining the cost estimate of the entire synthesis of a target molecule (col. 8, paragraphs 7 and 8 and col. 2, paragraph 7), as stated in instant claim 15. Mydlowec et al. do not describe generating a Gantt chart (instant claim 6), generating an offer to develop the target molecule for a customer including a price derived from the estimated total cost (instant claim 15), receiving acceptance from the customer and adding experiments to the plan to schedule required resources (instant claim 16), and tracking progress (instant claim 17).

Kauffman describes a method for operation management and determining robust processes for performing one or more tasks (abstract). Kauffman describes research and development of drug leads by pharmaceutical companies (0456). Kauffman describes using manufacturing resource planning (MRP) and scheduling to compute material volume requirements and timing requirements for those materials in a Gantt chart (0008, 0011) which represents generating a Gantt chart, as stated in instant claim 6. Kauffman describes using databases for resource availability and costs (0381), listing cost of every object (0117), unit cost of production (0232), a price that is paid by the resource request (customer) (0393), matching requests with offers (0041), propagating affordance values (costs) and fulfilling resource requests (0080) as well as contract terms including quantity and delivery constraints and offering a resource (0072) and communicating and confirming offers (0325, 0352), which represents generating an offer including a price and receiving acceptance from a customer, as stated in instant claims 15 and 16. Kauffman describes making sales offers for the exchange of goods

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including price, quantity, exchange location, exchange time, contracts, as well as purchase offers (0281) and operations management in the production of goods including supply chain management, job shop scheduling, and flow shop management (0002) and improving and modifying operations management via adding experiments (0232) which represents generating an offer and scheduling resources, as stated in instant claims 15 and 16. Kauffman describe monitoring traffic of resources, relaying resource requests and availabilities and adding transaction costs to match requested resources and offered resources (0079) which represents tracking progress, as stated in instant claim 17. Kauffman describe negotiating prices, setting delivery dates, and specifying the required quantity of materials (0005).

Mydlowec et al. state the design of synthesis routes must consider many factors, such as availability and cost of starting materials, energy and time requirements of reactions, and the cost of purifying the end products (col. 1, fourth paragraph). Kauffman states there is a need for a method to determine reliable and adaptive processes for performing one or more tasks (0017). It would have been obvious to the person of ordinary skill in the art at the time the invention was made to modify the method of Mydlowec et al. by using Gantt charts, generating offers of production, and tracking progress as taught by Kauffman where the motivation would have been to create a robust and reliable supply chain management, job shop scheduling, and organization structure in order to account for the effect of failures on the operation of the firm (as stated by Kauffman (0014)) since the operation management must be flexible and adaptive to changes in the firm's economic environment to improve its fitness (0015, 0226, and 0232).

Thus, Mydlowec et al., in view of Kauffman, make obvious the instant invention.

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Applicant summarizes how to establish a prima facie case of obviousness. Applicant argues that Mydlowec et al. do not disclose all the limitations of instant claims 1 and 9. This statement is found unpersuasive for reasons already discussed in the 35 USC 102 rebuttal above. Applicant argues that Mydlowec et al. teach away from the combination with Kauffman because Mydlowec et al. acknowledged problems of the conventional art, which do not automatically generate synthesis routes, because they are interactive with the user, only helping guide the selection of promising routes. This statement is found unpersuasive as Mydlowec et al. state that “presently available synthesis techniques do not automatically generate synthesis routes”, but they fail to mention that this is a problem. In fact, Mydlowec et al. point out issues with previous techniques that are without human interaction (col. 2, paragraph 3). Applicant argues that Mydlowec et al. solve “the” problem by providing a computer-implemented method to perform an automated designing of a synthesis route for a target molecule. This statement is found unpersuasive as the identified problem that Mydlowec et al. attempt to solve is for a method of automated design of chemical synthesis routes utilizing algorithms and/or programming for inventing chemical synthesis routes “that satisfy prespecified design goals” (col. 2, fourth paragraph) where the prespecified goals come from user interaction, as later described (col. 3, lines 43-54). Applicant summarizes the instant invention and argues it allows the users to be more interactive with the chemical compound development project. This statement is found unpersuasive as the instant claims do not recite any threshold for the amount of user interaction that is required. Applicant argues that Mydlowec et al. provide an “automated” computer system to generate a synthesis route for a target molecule, it does not provide any access to the resources for the users who have been involved in the chemical compound development project to manage

the designing process for the synthesis route. This statement is found unpersuasive as Mydlowec et al. disclose user access and interaction, as already discussed above. Applicant argues that the Mydlowec et al. reference teaches away the users' accesses to the molecules database and the synthesis database via at least one user interface in association with a chemical compound development project. This statement is found unpersuasive as Mydlowec et al. does not teach away, but rather disclose these limitations (col. 3, paragraph 11; col. 5, paragraph 1 to col. 6, paragraph 2; col. 12, paragraphs 1-5). Applicant's arguments are deemed unpersuasive for the reasons given above.

Conclusion

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR §1.6(d)). The Central Fax Center number for official correspondence is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn Smith, whose telephone number is (571) 272-0721. The examiner can normally be reached Monday through Thursday from 8 A.M. to 6:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached on (571) 272-0735.

July 16, 2007

/Carolyn Smith/
Primary Examiner
AU 1631